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ABSTRACT

A control apparatus comprising a movable control member, a positional servo loop consisting of a motor having a movable armature thereby maintaining the position of the control member at any one of a plurality of positions in a range of movement thereof in accordance with a demand signal, and means for detecting a force applied to the control member and for providing the demand signal which varies in accordance with the magnitude of the applied force, wherein the control member is rigidly attached to the armature so that movement of the control member is precisely mirrored by movement of the armature. The force is detected by measuring the current applied to the motor (which is proportional to the force). Direct drive of the control member eliminates backlash from the system.